CLAIMS

1.   A method of operating a plurality of disks comprising:

selecting units of data storage;

allocating the disks between an active group and an inactive group;

allocating units of data storage having a usage factor that meets the condition limit to the active group;

allocating units of data storage having a usage factor not meeting the condition limit to the inactive group; and

selectively reallocating disk between the active group and the inactive group based upon a disk use parameter.

2.   The method of claim 1 further comprising classifying the disks into a plurality of disk groups, including said active group and said inactive group.

3.   The method of claim 2 wherein the classifying the disk groups comprises assigning each disk to the active group based on required performance, power consumption, and desire to reduce and balance the wear within the disk groups.

4.   The method of claim 1 wherein determining the usage factor comprises determining a unit access parameter.

5.   The method of claim 4 wherein the access parameter comprises file popularity.

6.   The method of claim 1 wherein the usage factor classifies each unit based on whether the unit meets a conditional limit.

7.   The method of claim 6 wherein a total storage requirement is computed for each unit that meets the condition limit.

8.   The method of claim 7 wherein the active group is determined based on the condition limit and the total storage requirement.

9.   The method of claim 1 wherein the condition limit is determined based on the usage factors.

10.   The method of claim 1 wherein each unit meeting the condition limit is allocated evenly among the active group.

11.   The method of claim 1 wherein each unit not meeting the condition limit are allocated evenly among the inactive group.

12.   The method of claim 1 wherein allocating each unit comprises assigning and storing the unit.

13.   The method of claim 12 further comprising transferring units between the active and inactive disk groups whenever disks are reallocated between the two groups.

14.   The method of claim 12 further comprising periodically reassigning of disks into one of the active group or inactive group.

15.   The method of claim 14 wherein the periodic reassignment is based on required performance, power consumption, and desire to reduce and balance the wear within the disk groups.

16.   The method of claim 1 wherein controlling the duty cycle comprises controlling the starting and stopping of the disks.

17.   A computer usable medium including a program for operating a plurality of disks comprising:

computer readable program code for selecting units of data storage;

computer readable program code for allocating the disks between an active group and an inactive group;

computer readable program code for allocating units of data storage having a usage factor that meets the condition limit to the active group;

computer readable program code for allocating units of data storage having a usage factor not meeting the condition limit to the inactive group; and

computer readable program code for selectively reallocating disk between the active group and the inactive group based upon a disk use parameter.

18.   The computer usable medium of claim 17 further comprising classifying the disks into a plurality of disk groups, including said active group and said inactive group.

19.   The computer usable medium of claim 18 wherein the classifying the disk groups comprises assigning each disk to the active group based on required performance, power consumption, and desire to reduce and balance the wear within the disk groups.

20.   The computer usable medium of claim 17 wherein determining the usage factor comprises determining a unit access parameter.

21.   The computer usable medium of claim 20 wherein the access parameter comprises file popularity.

22.   The computer usable medium of claim 17 wherein the usage factor classifies each unit based on whether the unit meets a conditional limit.

23.   The computer usable medium of claim 22 wherein a total storage requirement is computed for each unit that meets the condition limit.

24.   The computer usable medium of claim 23 wherein the active group is determined based on the condition limit and the total storage requirement.

25.   The computer usable medium of claim 17 wherein the condition limit is determined based on the usage factors.

26.   The computer usable medium of claim 17 wherein each unit meeting the condition limit is allocated evenly among the active group.

27.   The computer usable medium of claim 178 wherein each unit not meeting the condition limit are allocated evenly among the inactive group.

28.   The computer usable medium of claim 17 wherein allocating each unit comprises assigning and storing the unit.

29.   The computer usable medium of claim 28 further comprising transferring units between the active and inactive disk groups whenever disks are reallocated between the two groups.

30.   The computer usable medium of claim 28 further comprising periodically reassigning of disks into one of the active group or inactive group.

31.   The computer usable medium of claim 30 wherein the periodic reassignment is based on required performance, power consumption, and desire to reduce and balance the wear within the disk groups.

32.   The computer usable medium of claim 17 wherein controlling the duty cycle comprises controlling the starting and stopping of the disks.

33.   A system for operating disks having files comprising:
    means for selecting units of data storage;
    means for allocating the disks between an active group and an inactive group;
    means for allocating units of data storage having a usage factor that meets the condition limit to the active group;
    means for allocating units of data storage having a usage factor not meeting the condition limit to the inactive group; and
    means for selectively reallocating disk between the active group and the inactive group based upon a disk use parameter.